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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.

IM:9/0510

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EXAMINER	

ART UNIT	PAPER NUMBER
1774	5

DATE MAILED: 05/10/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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Office Action Summary

Application No.	Applicant(s)
09/018,217	Schmidt et al.
Examiner	**Group Art Unit**
John J. Figueroa	1772

☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *three* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-32* is/are pending in the application.

Of the above, claim(s) *19-32* is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-18* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892 ✓

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). *4* ✓

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-18, which are drawn to an oxygen-scavenging composition and a package made from thereof, classified in class 428, subclass 36.91.

   II. Claims 19-32, which are drawn to a method of increasing the oxygen scavenging rate of a metal-activated scavenging polymer and an oxygen-scavenging article comprising said scavenging polymer, classified in class 528, subclass 480+.

2. The inventions are distinct, each from the other because of the following reasons: Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the scavenging article can be formed by solid stating the scavenging polymer at a very high vacuum, removing the polymeriztion condensation products, flushing the reaction products with mercury at a high vacuum, extruding the solid-stated polymer onto an injection mold and finally injection molding the parison to form the oxygen-scavenging article.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by the distinct search required for Group I which is not

required for Group II, by their different classification and because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Ms. Hendricks on April 23, 1999 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-18. Affirmation of this election must be made by applicant in replying to this Office action. Claims 19-32 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

Information Disclosure Statement

6. The information disclosure statement filed on October, 30, 1998 is acknowledged. However, there was no available English translations of document DE 2643204A1. Therefore, does not include a concise explanation of the relevance since it is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase " ... defined by no greater than 50 ppb of oxygen in 112 days ..." is vague and indefinite.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-5, 7-9 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Fransden'478.

Applicants recite an oxygen-scavenging composition comprising a solid-stating scavenging polymer and a metal activator. In dependent claims 2-5, Applicants limit said scavenging polymer to containing alpha-hydrogen carbonyl scavenging functional groups as e.g. a polyamide formed of m-xylene-diamine and adipic acid; and the metal activator to be cobalt.

Claim 7 recites a package formed from the composition of claim 1 and wherein claims 8-9 and 16 recites oxygen-scavenging rates for the package of claim 7.

Fransden'478 discloses a polymer composition, to be used for scavenging oxygen in packages; wherein said composition comprises a scavenging polymer, preferably MX nylons formed from m-xylene diamine and an aliphatic dicarboxylic acid, and an activating transition metal compound/complex. (Column 1, lines 5-10, 37-68; Column 2, lines 1-48; Column 4, line 60 through Column 6, line 10) Moreover, Fransden'478 discloses that cobalt is a preferred metal ion to be used together with polyamides in forming the oxygen scavenging composition. (Column 2, lines 48-55) Particularly, Fransden'478 discloses in Examples 2 and 3 on Columns 3-4 forming an oxygen-scavenging composition comprising cobalt and MXD-6 (poly-m-xylylene-adipamide) and in Table 1, Fransden'478 discloses oxygen rates of nearly zero (0.3) in cans comprising the nylon/cobalt-oxygen-scavenging composition (Column 4, lines 29-60).

Although Fransden'478 does not specifically disclose solid-stating the scavenging polyamides before forming the oxygen-scavenging composition, the method of forming a composition is not germane to the issue of patentability of the composition itself. Therefore, this limitation has not been given patentable weight.

The reference reads on the claims.

11. Claims 1-12 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Cochran'515.

Applicants further recite the claimed scavenging polymer to be MXD-6 and the metal activator to be in the form of cobalt neodecanoate and also limit the scavenging polymer to comprise no greater than 10% by weight of the total package weight.

Cochran'515 discloses a package wall including an oxygen-scavenging layer which has a permeance to oxygen of nearly zero (0.3 cm^3mm/ m^2atm day) comprising a composition further comprising a scavenging polymer catalyzed by an activating metal compound. (Column 4, lines 25-33; Column 5, 5-10, 23-41, 58-64; Column 5, line 66 to Column 6, line 16; Column 18, line 36 to Column 24, line 53) In addition, Cochran'515 discloses that preferred compositions comprise polymers MXD6 nylon, which is m-xylene diamine and adipic acid, with cobalt catalysts. (Column 8, line 41 to Column 9, line 14; Column 12, line 49-56)

Furthermore, Cochran'515 discloses in Example 7 on Column 15, 33 gm preform bottles comprising 2% by weight of MXD6 and 100 ppm of cobalt; and in Example 17 on Column 17, Cochran'515 discloses the preform to comprise 4% pf MXD6 and 100 ppm of cobalt neodecanoate.

Although Cochran'515 does not specifically disclose solid-stating the scavenging polyamides before forming the oxygen-scavenging composition, the method of forming a composition is not germane to the issue of patentability of the composition itself. Therefore, this limitation has not been given patentable weight.

The reference reads on the claims.

12. Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Collette'653.

Applicants further recite in claims 13-14 a multilayer beer bottle comprising inner and outer layers of polyethylene terephthalate (PET) and two inner layers comprising the scavenging polymer. Claims 15 and 17-18 limit the article to be transparent, have a shelf life of "50 ppb of oxygen in 112 days" and comprising outer and inner PET layers; wherein the scavenging polymer composition is a central layer which is more than 15% of the total article/package weight.

Collette'653 discloses a transparent three-layer sidewall comprising inner and outer virgin-PET layers and an oxygen-scavenging composition core layer to be used in multilayer preforms and containers such as blow-molded recycled-PET beverage bottles; wherein the oxygen-scavenging composition comprises MXD-6 nylon (meta-xylene diamine with adipic acid) and a transition metal catalyst such as cobalt, cobalt oxide or cobalt powder. (Column 1, lines 6-18; Column 3, line 50 to Column 4, line 35; Column 6, line 39 to Column 8, line 11 and Figures 4-7; Column 9, line 60 to Column 10, line 60; Column 13, lines 66-67; Column 14, lines 37-38). It is the Examiner's position that the term "cobalt", as used by Collette'653, comprises "cobalt neodecanoate". Particularly, in Column 9, lines 60-67, Collette'653 discloses the three layer sidewall to comprise inner and outer virgin PET layers and a core oxygen-scavenging layer comprising 2% by weight of MXD-6 with 200 ppm of the metal activator.

Moreover, Collette'653 discloses an alternative five-layer structure comprising two intermediate oxygen scavenging layers further comprising a PET/MXD-6/cobalt blend

comprising preferably 4-6 of the total preform weight which provides optimum barrier protection while maintaining transparency. (Column 9, lines 24-38)

Furthermore, it is the Examiner's position that since Collette'653's beverage bottles comprise the same MXD-6/cobalt oxygen-scavenging composition as Applicants' Examples 3 and 4, Collette'653's bottle sidewall will inherently have the same oxygen-scavenging rates as that claimed by the Applicants.

Although Collette'653 does not specifically disclose solid-stating the scavenging polyamides before forming the oxygen-scavenging composition, the method of forming a composition is not germane to the issue of patentability of the composition itself. Therefore, this limitation has not been given patentable weight.

The reference reads on the claims.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 1-18 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Collette'653 as applied to claim 1 above in view of Pushee.

Collette'653 was discussed above in Paragraph #12. Collette'653 does not specifically disclose solid stating the scavenging polymer prior to forming the oxygen-scavenging composition.

However, Pushee teaches that solid stating polymeric resins prior to injection molding causes a chain growth effectively removing undesired impurities used in or produced during the melt phase polymerization of the resin. (Column 1, lines 30-40) Likewise, Pushee teaches that the intrinsic viscosity (I.V.) of the polymer resin may be increased by effectively solid stating the resin prior to injection molding thereby providing a bottle which has a higher orientation and a desired strength while using a minimal amount of resin due to the higher resin I.V. (Column 1, lines 1-40)

Therefore, it would have been obvious to a person skilled in the art at the time Applicants' claimed invention was made to solid state the scavenging polymer prior to forming Collette'653's beverage bottle. One skilled in the art would have been motivated to do so in order to incorporate Pushee's teachings and attain a resultant beverage bottle with superior mechanical properties and yet more cost-efficient to manufacture.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Figueroa whose telephone number is (703) 305-0582. The Examiner can normally

be reached on Monday through Thursday from 8:00 a.m. to 5:30 p.m. The Examiner can also be reached on alternate Fridays.

If the attempts to reach the Examiner are unsuccessful, the Examiner's supervisor, Ellis P. Robinson can be reached by dialing (703) 308-2364. The fax phone number for the organization where this application is assigned is (703) 305-5408.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose phone number is (703) 308-0661.

Ellis P. Robinson

Ellis Robinson
Supervisory Patent Examiner
Technology Center 1700

jjf

May 3, 1999

FORM PTO-1449(Modified)

LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO. C0762/7224	SERIAL NO. 09/018,217
APPLICANT Schmidt et al.	
FILING DATE February 3, 1998	GROUP Unassigned

U.S. PATENT DOCUMENTS

Exam Init	Ref Des	Document No.	Date	Name	Class	Sub Class	FILING DATE If Appropriate
JSF		3,586,514	06/22/71	Viilbrief	99	171	
JSF		4,401,805	08/30/83	Weemes et al.	528	302	
JSF		4,501,781	02/26/85	Kushida et al.	428	35	
JSF		4,567,227	01/28/86	Kiss	524	538	
JSF		4,728,549	03/01/88	Shimizu et al.	428	35	
JSF		5,021,515	06/04/91	Cochran et al.	525	371	
JSF		5,028,226	07/02/91	De'ath et al.	425	130	
JSF		5,034,252	07/23/91	Nilsson et al.	428	35.8	
JSF		5,049,624	09/17/91	Adams et al.	525	371	
JSF		5,077,111	12/31/91	Collette	428	36.7	
JSF		5,159,005	10/27/92	Frandsen et al.	524	413	
JSF		5,194,478	03/16/93	Frandsen et al.	524	398	
JSF		5,202,052	04/13/93	Zenner et al.	252	188.28	
JSF		5,239,016	08/24/93	Cochran et al.	525	371	
JSF		5,281,360	01/25/94	Hong et al.	252	188.28	
JSF		5,506,014	04/09/96	Minnick	428	35.7	
JSF		5,639,815	06/17/97	Cochran et al.	524	413	
JSF		5,759,653	06/02/98	Collette et al.	428	35.9	

FOREIGN PATENT DOCUMENTS

		Country & Doc. No. (11)	Pub. Date (43)		Class	Sub Class	Translation Yes	Translation No
—		~~DE 26 43 204 A1~~	~~06.04.78~~	~~Cordes et al.~~			—	X
JSF		EP 0 083 826 A1	20.07.83	Farrell et al.	—	—		
JSF		EP 0 288 972 B1	02.11.88	Harada et al.	—	—		
JSF		EP 0 394 751 A2	31.10.90	Wakumoto et al.	—	—		
JSF		EP 0 527 902 B1	24.02.93	Frandsen et al.	—	—		
JSF		EP 0 527 903 B1	24.02.93	Frandsen et al.	—	—		
JSF		WO 96/18685	20.06.96	Collette el al.	—	—		
JSF		WO 96/18686	20.06.96	Schmidt et al.	—	—		
JSF		WO 98/13266	02.04.98	Schmidt et al.	—	—		

EXAMINER	DATE CONSIDERED
John D. Figueroa	4/99

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered.
Include copy of this form with next communication to applicant.

OTHER ART
(Including Author, Title, Date, Pertinent Pages, Publication, Etc.)

SH			Chemical Abstract, Vol. 100, Page 60, Abstract no. 193165x, Published 1984
SH			Chemical Abstract, Vol. 107, No. 10, Page 14, Abstract no. 78465C, Published 09/07/87
SH			Chemical Abstract, Vol. 118, No. 4, Page 42, Abstract no. 23225w, Published 01/25/93

EXAMINER	DATE CONSIDERED
[signature]	4/99

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Notice of References Cited

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09/018,217	Schmidt et al.		
Examiner	Group Art Unit	Page 1 of 1	
John J. Figueroa	1772		

U.S. PATENT DOCUMENTS

	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS
A	4,392,804	7/12/83	Pushee et al.	425	174.8
B	5,194,478	3/16/93	Fransden et al.	524	398
C	5,021,515	6/4/91	Cochran et al.	525	371
D	5,759,653	6/2/98	Collette et al.	428	35.9
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FOREIGN PATENT DOCUMENTS

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S						
T						

NON-PATENT DOCUMENTS

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